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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,298	07/12/2005	Nikolaus Schunk	MAIKP174WOUS	4907

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ESCHWEILER & ASSOCIATES LLC  
629 EUCLID AVENUE, SUITE 1210  
NATIONAL CITY BUILDING  
CLEVELAND, OH 44114

EXAMINER
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KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
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2883

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/507,298

Applicant(s)

SCHUNK, NIKOLAUS

Examiner

Kianni C. Kaveh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 19 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) 6, 7 and 13 is/are objected to.
- 8) ☒ Claim(s) 19 and 20 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

I) claims 1-18

II) claim 19

III) claim 20

Applicant is required, in reply to this action, to elect a single species to which the claims shall be restricted if no generic claim is finally held to be allowable. The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

The claims are deemed to correspond to the species listed above in the following manner:

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Group I, claims 1-18 directed to optoelectronic transceiver device; Group II, claim 19 directed to optoelectronic transducer device, Group III, claim 20 directed to a printed circuit board, a lens and a leadframe device.

The following claim(s) are generic: none.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: The species are independent or distinct because each of the above group inventions, as described above, has limitation(s) that is directed toward an invention that would require a different search than that of other group inventions and because each of the above species defining an invention that is distinct from that of the other and requiring a different search.

During a telephone conversation with Mr. Esthweiler on 1/16/07 a provisional election was made without traverse to prosecute the invention of I, claims 1-18. Affirmation of this election must be made by applicant in replying to this Office action. Claims 19-20 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### **Claim and Specification Objections**

In the second line of claim 17 'the' before forms creates antecedent problem and it may be corrected to 'a'. In claim 12 as well as throughout specification SMD is not spelled out. Appropriate corrections are required.

#### ***Claim Rejections - 35 USC 112***

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

claim 12 is ambiguous, since the limitation 'the submount can be mounted on a main circuit board, in particular by SMD mounting' does not specify what is 'SMD mounting'? is it a particular process with particular steps? The examiner notes such mounting is not specified in the specification specifying such mounting process 'in particular'. Correction is required.

#### ***Allowable Subject Matter***

Claims 6-7 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 6 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the encapsulation material forms an integrated

lens on the side facing the coupling area in combination with the rest of the limitations of the base claim. Claim 7 is also allowable by virtue of dependence.

Claim 13 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the main circuit board is used as a heat sink for the submount and/or for the electrical drive and/or receiving circuit which is arranged on the submount, with the submount having plated holes which are also used for heat conduction in combination with the rest of the limitations of the base claim.

### **Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5, 8-12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus et al. (US 6422766).

Althaous teaches an optoelectronic module (shown in at least fig. 1) comprising: a transmitting and/or receiving element (shown in at least fig. 1, item light transmit/receive element), a mount for supporting the transmitting and/or receiving element (shown in at least fig. 1, item support for light transmit/receive element), a holding and coupling part for receiving the transmitting and/or receiving element and which is at least partially filled with an encapsulation material (see fig. 3b, and 4<sup>th</sup> parag., in which filling material is resin), and which has a coupling area for receiving an optical waveguide 23, and an electrical drive and/or receiving circuit 17 coupled to the transmitting and/or receiving element, wherein the encapsulation material surrounds the transmitting and/or receiving element and is located at least partially in the holding and coupling part (see at least col. 4, line 38-col. 5, line 18, wherein plastic/resin foaming encapsulates the transmit/receiving elements), wherein the electrical control and/or receiving circuit is arranged outside the holding and/or coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area (shown in at least figures 1, 3, 9 and 10, item circuit/receiving circuit arranged outside the holding and/or coupling part on a submount), and wherein the mount is arranged at right angles to the submount (as shown in at least fig. 3, items 21 and 19, in which mount with respect to submount is in right angles).

However, in above embodiment Althaous does not explicitly state that the circuit control circuit is drive circuit. It is well known to those of ordinary skill in the art when the invention was made that a control circuit controlling the circuit functions is drive circuit since such drive circuit would provide high data rate transmission (see col. 1).

Althaus further teaches wherein the holding and coupling unit forms a cylindrical cutout, one of whose ends contains the transmitting and/or receiving element, and whose other end forms the coupling area for an optical waveguide (shown in at least fig. 1);

wherein the mount is fitted only with the transmitting and/or receiving element or with the transmitting element and a monitor diode (shown in at least fig. 1, item 2); wherein the mount is a leadframe, which provides an electrical link for the transmitting and/or receiving element and is electrically connected to the submount (shown in at least fig. 1, item 3/5); the leadframe runs at right angles to the longitudinal axis of the coupling area, at least in the area of the holding and coupling part (shown in at least fig. 1, item 3/5); wherein the module is mechanically coupled to a plug housing wherein the module is mechanically coupled to a naked waveguide adaptor (shown in at least fig. 1-3 item 23); an optical waveguide is firmly clamped by means of a clamp in an area of the naked waveguide adaptor which is in the form of a trough (shown in at least fig. 1-4, item waveguide clam); the naked waveguide adaptor is formed by an extension to the cylindrical coupling area (shown in at least fig. 1-3 item 23); wherein the submount can be mounted on a main circuit board, in particular by SMD mounting (see parag 19 of summary section); wherein the holding and coupling part and/or the submount have/has self-coupling structures which allow automatic adjustment of the elements with respect to one another and/or with respect to a main circuit board (shown in at



least fig. 1-3 and see parag 19 of summary section); wherein a housing cover is provided and surrounds the submount with the electrical drive and/or receiving circuit, and/or that end of the holding and coupling part which faces away from the coupling area (shown in at least fig. 1-3, item housing cover); wherein the holding and coupling part and/or the housing cover are/is provided with an electrically conductive layer, and/or are/is composed of a conductive plastic material (see at least fig. 1-3 and see at least col. 4, line 38-col. 5, line 18, wherein plastic/resin foaming encapsulates the transmit/receiving elements) wherein the holding and coupling part is in the form of a double chamber and, in parallel, separate areas, has firstly a transmitting element and secondly a receiving element, each of which can be coupled via a separate coupling area to an optical waveguide (shown in at least fig. 10, double chamber with waveguide coupling; note that parallel is a broad term in which until a frame of a reference is not provided can be parallel in a given direction); wherein the submount is arranged underneath the coupling area of the holding and coupling part shown in at least fig. 1o).

Claims 1-5, 8-12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isono et al. (Us 7050678).

Isono teaches an optoelectronic module (shown in at least fig. 3) comprising: a transmitting and/or receiving element (shown in at least fig. 3, item light transmit/receive element), a mount for supporting the transmitting and/or receiving element (shown in at least fig. 3, item support for light transmit/receive element), a

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holding and coupling part for receiving the transmitting and/or receiving element and which is at least partially filled with an encapsulation material (see fig. 25, item resin in 141 and also parag. 141 of detailed disclosure), and which has a coupling area for receiving an optical waveguide 6, and an electrical drive and/or receiving circuit coupled to the transmitting and/or receiving element (see parag. 61 of detailed disclosure), wherein the encapsulation material surrounds the transmitting and/or receiving element and is located at least partially in the holding and coupling part (see fig. 25. item resin 141 and also resin surrounding the elements in at least fig. 3-7), wherein the electrical control and/or receiving circuit is arranged outside the holding and/or coupling part on a submount, which lies on a plane that runs parallel to the longitudinal axis of the coupling area (shown in at least figures 4-5 item circuit/receiving circuit arranged outside the holding and/or coupling part on a submount), and wherein the mount is arranged at right angles to the submount (as shown in at least fig. 3, items mount with respect to submount is in right angles); Isono further teaches wherein the holding and coupling unit forms a rectangular cutout, one of whose ends contains the transmitting and/or receiving element, and whose other end forms the coupling area for an optical waveguide (shown in at least fig. 3).

However, in above embodiment Isono does not explicitly state that the circuit control circuit is drive circuit and that the above rectangular is cylindrical. It is well known to those of ordinary skill in the art when the invention was made that a control circuit controlling the circuit functions is drive circuit and that as a matter of design choice to

make the shape of the cutout conventionally cylindrical, since such device would provide high data rate transmission such as Ethernet (see col. 1).

Isono further teaches wherein the mount is fitted only with the transmitting and/or receiving element or with the transmitting element and a monitor diode (see parag. 102 of detail, item 127); wherein the mount is a leadframe, which provides an electrical link for the transmitting and/or receiving element and is electrically connected to the submount (shown in at least fig. 1, item 12/12a); the leadframe runs at right angles to the longitudinal axis of the coupling area, at least in the area of the holding and coupling part (shown in at least fig. 3, item 12/12a); wherein the module is mechanically coupled to a plug housing wherein the module is mechanically coupled to a naked waveguide adaptor (shown in at least fig. 1-3 item waveguide 6); an optical waveguide is firmly clamped by means of a clamp in an area of the naked waveguide adaptor which is in the form of a trough (shown in at least fig. 1-4, item waveguide clam); the naked waveguide adaptor is formed by an extension to the cylindrical coupling area (shown in at least fig. 1-3 item waveguide); wherein the submount can be mounted on a main circuit board, in particular by SMD mounting (shown in at least fig. 4-5); wherein the holding and coupling part and/or the submount have/has self-coupling structures which allow automatic adjustment of the elements with respect to one another and/or with respect to a main circuit board (shown in at least fig. 3); wherein a housing cover is provided and surrounds the submount with the electrical drive and/or receiving circuit, and/or that end of the holding and coupling part which faces away from the coupling area (shown in at least fig. 1-3, item housing cover);

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wherein the holding and coupling part and/or the housing cover are/is provided with an electrically conductive layer, and/or are/is composed of a conductive plastic material (see at least fig. 3 and see parag. 141 of detailed disclosure) wherein the holding and coupling part is in the form of a double chamber and, in parallel, separate areas, has firstly a transmitting element and secondly a receiving element, each of which can be coupled via a separate coupling area to an optical waveguide (shown in at least fig. 25, double chamber with waveguide coupling; note that parallel is a broad term in which until a frame of a reference is not provided can be parallel in a given direction); wherein the submount is arranged underneath the coupling area of the holding and coupling part shown in at least fig. 1o).

#### ***Citation of Relevant Prior Art***

Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

US-20060013542 or US-20040127102 or US-20030171022 or US-20030026168 or US-20020142634 or US-20020009905 ) or (US-6309566 or US-5960141 or US-6422766 or US-7050678 or US-6890206 or US-6551117 or US-6267606 or US-5879173)

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kianni C. Kaveh whose telephone number is 571-272-2417. The examiner can normally be reached on 9:30-19:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Cyrus Kianni  
Primary Patent Examiner  
Group Art Unit 2883

January 18, 2007

**KAVEH KIANNI  
PRIMARY EXAMINER**



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